

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gregory D. PLOWMAN, et al.
Title: DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS
Appl. No.: 09/095,478
Filing Date: June 10, 1998
Examiner: T. Gaputa
Art Unit: 1642

LETTER

Tony Gaputa
Washington, D.C. 20231

Sir:

Per our telephone conversation of September 21, 2001, enclosed please find the following documents pertaining to the above-referenced application:

1. Office Action dated January 20, 2000;
2. Notice of Abandonment dated April 26, 2000;
3. Response to Office Action filed May 12, 2000;
4. Revocation of Prior Powers of Attorney and Appointment of New Power of Attorney by Assignee Change of Correspondence Address, Change of Correspondence Address and Status Inquiry filed May 14, 2001.

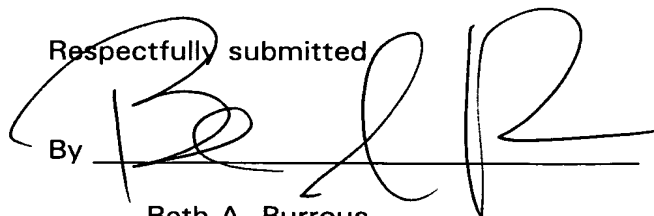
The final date for response to the January 20, 2000 Office Action was July 20, 2000, so the May 12, 2000 submission was timely filed. If you have any questions or need additional information, please feel free to contact me. Thank you for your prompt attention to this matter.

Date

Oct 10, 2001

Respectfully submitted

By



Beth A. Burrous
Attorney for Applicant
Registration No. 35,087

FOLEY & LARDNER
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5109
Telephone: (202) 672-5475
Facsimile: (202) 672-5399



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

113

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/095,678	06/10/98	GREGORY D.	205705A

022249
LYON & LYON LLP
SUITE 4700
633 WEST FIFTH STREET
LOS ANGELES CA 90071-2066

HM22/0120

EXAMINER
SUN HOFFMAN, L

ART UNIT
1642

PAPER NUMBER
8

DATE MAILED: 01/20/00

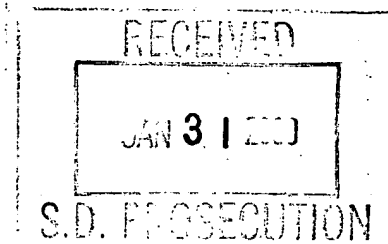
Amat due: 2.20.00

PWA SGA PER due: 2.20.00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

RECEIVED
OCT 11 2001
TECH CENTER 1600/2900



RECEIVED
JAN 24 2000
U.S. PROSECUTION

Office Action Summary

Application No.
09/095,478

Applicant(s)

Plowman et al.

Examiner
Lin Sun-Hoffman

Group Art Unit
1642



☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 1 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 2-5, 7, 9, and 23-34 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☐ Claim(s) _____ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☒ Claims 2-5, 7, 9, and 23-34 are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

RECEIVED
TECH CENTER 1600/2900
OCT 10 2001
3:43 PM

RECEIVED
OCT 1 2001
TECH CENTER 1600/2900

Art Unit: 1642

DETAILED ACTION

Election/Restriction

1. Applicants' response of election is acknowledged. However, Applicant failed to response the requirement for election of PTP10 or PTP05 depicted in previous Office Action mailed on 10/4/99. Further election of the polynucleotide sequences that direct to either PTP 05 or PTP10 is required.

Sequence Compliance

2. Applicants have submitted a computer readable form of the sequence listing, however, the sequences present in SEQ. ID NO: 5-7 in computer readable forms are not compatible with the claimed the region. SEQ. ID NO: 5 has only 122 amino acids; SEQ. ID NO: 6 has only 354 amino acids; and SEQ. ID NO: 7 has only 381 amino acids.

Since the above-mentioned reply appears to be *bona fide*, applicants are given a TIME PERIOD of **ONE (1) MONTH** or **THIRTY (30) DAYS**, from the mailing date of this notice, whichever is longer, within which to supply the omission or correction in order to avoid abandonment. **EXTENSIONS OF THIS TIME LIMIT MAY BE GRANTED UNDER 37 CFR 1.136(a).**

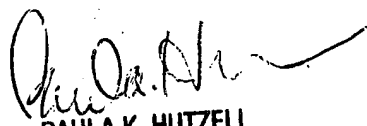
Any inquiry concerning this communication should be directed to Examiner Lin Sun-Hoffman, Ph.D., Art Unit 1642, whose telephone number is (703)308-7552. Any inquiry of a general nature or relating to the status of this application should be directed to the Group

Art Unit: 1642

receptionist whose telephone number is (703) 308-0196. Any questions regarding compliance with the sequence rules requirements specifically should be directed to the departments listed at the bottom of the Notice to Comply.

Lin Sun-Hoffman, Ph.D.

Jan. 11, 00.



PAULA K. HUTZELL
SUPERVISORY PATENT EXAMINER

Application No. 09/095487

**NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING
NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES**

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- ☒ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to these regulations, published at 1114 OG 29, May 15, 1990 and at 55 FR 18230, May 1, 1990.
- ☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
- ☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
- ☐ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."
- ☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
- ☒ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
- ☒ 7. Other: please provide Seq ID # 5-7

Applicant Must Provide:

- ☒ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".
- ☒ An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
- ☒ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216

For CRF Submission Help, call (703) 308-4212

For PatentIn software help, call (703) 308-6856

PLEASE RETURN A COPY OF THIS NOTICE WITH YOUR RESPONSE

**UNITED STATES DEPARTMENT OF COMMERCE****Patent and Trademark Office**Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

KD

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/095,478	06/10/98	GREGORY D.	P 235/054

022249
LYON & LYON LLP
SUITE 4700
633 WEST FIFTH STREET
LOS ANGELES CA 90071-2066

HM22/0426

EXAMINER	
SUN HOFFMAN, L	
ART UNIT	PAPER NUMBER
1642	

DATE MAILED:

04/26/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

RECEIVED
OCT 11 2001
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MAY 01 2000
U.S. PROSECUTION

Notice of Abandonment

Application No.

09/095,478

Applicant(s)

Plowman et al.

Examiner

First Last

Group Art Unit

1234



This application is abandoned in view of:

- ☒ applicant's failure to timely file a proper response to the Office letter mailed on Jan 20, 2000.
- ☐ A response (with a Certificate of Mailing or Transmission of _____) was received on _____, which is after the expiration of the period for response (including a total extension of time of _____ month(s)) which expired on _____.
- ☐ A proposed response was received on _____, but it does not constitute a proper response to the final rejection.
(A proper response to a final rejection consists only of: a timely filed amendment which places the application in condition for allowance; a Notice of Appeal; or the filing of a continuing application under 37 CFR 1.62 (FWC)).
- ☒ No response has been received.
- ☐ applicant's failure to timely pay the required issue fee within the statutory period of three months from the mailing date of the Notice of Allowance.
- ☐ The issue fee (with a Certificate of Mailing or Transmission of _____) was received on _____.
- ☐ The submitted issue fee of \$ _____ is insufficient. The issue fee required by 37 CFR 1.18 is \$ _____.
- ☐ The issue fee has not been received.
- ☐ applicant's failure to timely file new formal drawings as required in the Notice of Allowability.
- ☐ Proposed new formal drawings (with a Certificate of Mailing or Transmission of _____) were received on _____.
- ☐ The proposed new formal drawings filed _____ are not acceptable.
- ☐ No proposed new formal drawings have been received.
- ☐ the express abandonment under 37 CFR 1.62(g) in favor of the FWC application filed on _____.
- ☐ the letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
- ☐ the letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
- ☐ the decision by the Board of Patent Appeals and Interferences rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.
- ☐ the reason(s) below:

NANCY A. JOHNSON, PH.D
PRIMARY EXAMINER

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Gregory Plowman, et al.

Serial No.: 09/095,478

Filed: June 10, 1998

For: **DIAGNOSIS AND TREATMENT OF
PTP RELATED DISORDERS**

Group Art Unit: 1642

Examiner: Lin Sun-Hoffman

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01 OCT 10 PM 3:20

*Copy to
paper #
HLP*

TRANSMITTAL LETTER

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Transmitted herewith for filing in the above-referenced application are the following:


- Response to Office Action;
- Statement Under 37 C.F.R. § 1.821 (F);
- Submission of Sequence Listing;
- Sequence Listing on ASCII formatted diskette;
- Petition for Extension of Time;
- Return postcard.

CERTIFICATE OF MAILING
(37 C.F.R. §1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

May 12, 2000
Date of Deposit

Ruth Saskowski
Name of Person Mailing Paper

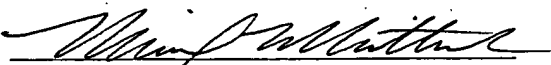

Signature of Person Mailing Paper

Also enclosed is a check for the total amount of \$870.00 as required by 37 CFR § 1.17 (a) for the petition fee. If the enclosed fee is incorrect, please charge or credit our Deposit Account No. 50-1273 for the appropriate amount.

Respectfully submitted,

BROBECK, PHLEGER & HARRISON LLP

Dated: 5/12/00

By: 
Michael A. Whittaker
Reg. No. 46,230

BROBECK, PHLEGER & HARRISON LLP
12390 El Camino Real
San Diego, California 92130
Telephone: (858) 720-2500
Facsimile: (858) 720-2555

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Plowman et al.

Serial No.: 09/095,478

Filed: June 10, 1998

For: DIAGNOSIS AND TREATMENT OF PTP
RELATED DISORDERS

Group Art Unit: 1642

Examiner: Lin Sun-Hoffman

RESPONSE TO OFFICE ACTION

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the Office Action mailed January 20, 2000 ("Paper No. 8"), please consider the following remarks.

SUMMARY

Claims 2-5, 7, 9, and 23-24 are currently pending in the application.

RESTRICTION REQUIREMENT

In Paper No. 8, the Examiner has required that one of PTP10 or PTP05 be elected for prosecution. Applicants hereby elect PTP10.

305644

Certificate of Mailing
(37 C.F.R. § 1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Ruth SASKOWSKI
Name of Person Mailing Paper

5/12/00
Date of Deposit

[Signature]
Signature of Person Mailing Paper

SEQUENCE COMPLIANCE

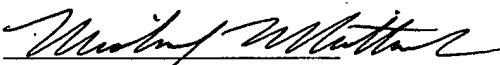
The Examiner states that the computer readable and paper forms of the sequence listing previously filed by Applicants are not compatible. Applicants submit herewith a substitute copy of both the paper and computer readable forms, together with the required statement under 37 C.F.R. § 1.821.

CONCLUSION

Applicants respectfully submit that the pending claims are in condition for allowance. An early notice to that effect is earnestly solicited. Should any matters remain outstanding, the Examiner is encouraged to telephone the undersigned at (858) 720-2500 so that they may be resolved without the need for additional action and response thereto.

Respectfully submitted,
Brobeck, Phleger & Harrison LLP

Dated: 5/12/00

By: 
For Richard J. Warburg,
Michael A. Whittaker
Registration No. P-46,230

12390 El Camino Real
San Diego, CA 92130
Telephone: (858) 720-2500

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
) Group Art Unit: 1642
Gregory Plowman, et al.)
) Examiner: Hoffman, L.
Serial No: 09/095,478)
)
Filed: June 10, 1998)
)
For: DIGANOSIS AND TREATMENT OF PTP)
 RELATED DISORDERS)
)
)

STATEMENT UNDER 37 C.F.R. § 1.821 (F)

Assistant Commissioner of Patents
Washington, D.C. 20231


Sir:

I hereby state that the content of the paper and computer readable copies of the Sequence Listing, submitted in accordance with 37 C.F.R. § 1.821 (e), (f) and (g), or § 1.825 (d) and (b) respectively, are the same.

Respectfully submitted,

Brobeck, Phleger & Harrison LLP

Dated: 5/12/00

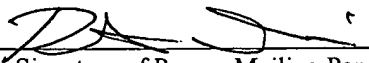
By: 
Michael A. Whittaker
Reg. No. 46,230

12390 El Camino Real
San Diego, California 92130-2081
Telephone: (858) 720-2500
Facsimile: (858) 720-2555

CERTIFICATE OF MAILING
(37 C.F.R. § 1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

5/12/00
Date of Deposit

Ruth Saskowski
Name of Person Mailing Paper

Signature of Person Mailing Paper

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Gregory Plowman, et al.

Serial No. 09/095,478

Filed: June 10, 1998

For: **DIAGNOSIS AND TREATMENT OF
PTP RELATED DISORDERS**

Group Art Unit: 1642

Examiner: Hoffman, L.

SUBMISSION OF SEQUENCE LISTING

Responsive to the Communication mailed January 20, 2000, Applicants submit herewith the "Sequence Listing" in paper copy and in computer readable form as required under § 1.824 (a).

The Sequence Listing is provided in ASCII text on the accompanying diskette and the Statement Under 37 C.F. R. § 1.821 (f) is also provided. A copy of the Notice to Comply is attached to this Response.

CERTIFICATE OF MAILING (37 C.F.R. § 1.8a)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Date of Deposit

5/12/00

Ruth Saskowski

Name of Person Mailing Paper



Signature of Person Mailing Paper

Please amend the specification by entering the enclosed Sequence Listing. The Sequence Listing was generated from the specification, Figures 1A, 1B and does not constitute new matter.

Pursuant to 37 CFR § 1.136 (a), applicants submit herewith petition for a three month extension of time. This extension of time is effective to allow timely filing of this response up to and including May 20, 2000.

Also enclosed is a check for the total amount of \$870.00 as required by 37 CFR § 1.17 (a) for the petition fee. If the enclosed fee is incorrect, please charge or credit our Deposit Account No. 50-1273 for the appropriate amount.

Respectfully submitted,

Brobeck, Phleger & Harrison LLP

Dated: 5/12/00

By Robert W. Prince
Robert W. Prince
Reg. No. 38,583

Brobeck, Phleger & Harrison LLP
12390 El Camino Real
San Diego, CA 92130-2081
Telephone: (858) 720-2500
Facsimile: (858) 720-2555

Application No. 09/095487**NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING
NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES**

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

- ☒ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to these regulations, published at 1114 OG 29, May 15, 1990 and at 55 FR 18230, May 1, 1990.
- ☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).
- ☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).
- ☐ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."
- ☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).
- ☒ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable form of the "Sequence Listing" as required by 37 C.F.R. 1.821(e).
- ☒ 7. Other: please provide Seq ID # 5-7

Applicant Must Provide:

- ☒ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".
- ☒ An initial or substitute paper copy of the "Sequence Listing", as well as an amendment directing its entry into the specification.
- ☒ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(a) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216

For CRF Submission Help, call (703) 308-4212

For PatentIn software help, call (703) 308-6856

PLEASE RETURN A COPY OF THIS NOTICE WITH YOUR RESPONSE

IMATION

Inv: Plowman, et al.
S.N.: 09/095, 478
Filed: June 10, 1998
Title: Diagnosis...
Susan - 235/054-MS

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: Gregory Plowman
Bahija Jallal
- (ii) TITLE OF INVENTION: DIAGNOSIS AND TREATMENT OF
PTP RELATED DISORDERS
- (iii) NUMBER OF SEQUENCES: 23
- (iv) CORRESPONDENCE ADDRESS:
- (A) ADDRESSEE: Brobeck, Phleger & Harrison LLP
(B) STREET: 12390 El Camino Real
(C) CITY: San Diego
(D) STATE: California
(E) COUNTRY: U.S.A.
(F) ZIP: 92130-2081
- (v) COMPUTER READABLE FORM:
- (A) MEDIUM TYPE: 3.5" Diskette, 1.44 Mb
storage
(B) COMPUTER: IBM Compatible
(C) OPERATING SYSTEM: IBM P.C. DOS 5.0
(D) SOFTWARE: FastSEQ for Windows 2.0
- (vi) CURRENT APPLICATION DATA:
- (A) APPLICATION NUMBER: 09/095,478
(B) FILING DATE: June 10, 1998
(C) CLASSIFICATION:
- (vii) PRIOR APPLICATION DATA:
- (A) APPLICATION NUMBER: 60/049,756
(B) FILING DATE: June 11, 1997
- (A) APPLICATION NUMBER:
(B) FILING DATE:
- (viii) ATTORNEY/AGENT INFORMATION:
- (A) NAME: Warburg, Richard J.
(B) REGISTRATION NUMBER: 32,327
(C) REFERENCE/DOCKET NUMBER: 235/054

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: (858) 720-2500
 (B) TELEFAX: (585) 720-2555
 (C) TELEX: 3760

(2) INFORMATION FOR SEQ ID NO: 1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1785 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

```

GGTTATGTCT GACTCACTGC ACTGGAGTTT GGCAAAAGCA TCTCAGAAGT GGTTGTGCTT      60
TTTTGAATGA AATGATCAAT GGAGTGCCTCC AGTTGTATGC TGGCCTCTGG ATACTAACTA      120
GACCTGCCTG ACTCCAGGAA CTAAGGCTCA GTATCTGCAG AAGCTTTTGT CCCATCTCAT      180
TCCGGCTATG GGGACAACAT GTCTTCACCC AGGAAGGTTA GAGGAAAAAC TGGAAGAGAT      240
AATGATGAAG AGGAGGGTAA TTCAGGTAAC CTGAATCTCC GCAACTCTTT GCCTTCATCG      300
AGTCAGAAAA TGACGCCTAC GAAGCCGATT TTTGGGAATA AAATGAATTC AGAGAATGTA      360
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ATGACTCTGC CTGATGACTT CAATTCTGGG AATACTACT AGAACAGAGA TAAGAACAGA      780
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CAAGGACCAT TGCCAGAAAC TATAGAAGAC TTTTGGCAA TGGTCTTGGA AAATAATTGT      960
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TGGCCCATTT CTCTGAAGGA GCCTTTGGAA TTCGAACACT TTAGTGTCTT TCTGGAGACC     1080
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AAGAGCCAAT GTGTAAAACA CTTGCAGTTC ACCAAGTGGC CAGACCATGG CACTCCTGCC     1200
TCAGCAGATT TTTTCATAAA ATATGTCCGT TATGTGAGGA AGAGCCACAT TACAGGACCC     1260
CTCCTTGTTT ACTGCAGTGC TGGTGTAGGC CGAACAGGGG TGTTCATATG TGTGGATGTT     1320
GTGTTCTCTG CCATCGAGAA GAACTACTCT TTTGACATTA TGAACATAGT GACCCAGATG     1380
AGAAAGCAGC GCTGTGGCAT GATTCAAACC AAGGAGCAGT ACCAGTTTGT TTATGAAATT     1440
GTGCTTGAAG TTCTTCAGAA CCTTCTGGCT TTGTATTAA AGAGACTTCT GCGCCTGTCC     1500
CTCGAGGTTA CCGAGCAGCT TGGAGCCTGA GCCGTCTGTA AGCGTCTGCG GGCCGTGCAG     1560
TCTGCCTTCT GATTTTCTCT TCTGAAAGTC CCTGAAGGTA GCACTACTGG GCACAGAGTG     1620
AACTGTTTCC ACTTGATCTT TCTGAACAAG AGCAAAATAC CCTCCATGCC TTCTACGGAA     1680
ACGGAAGTTG CATGAAACAA CCTCCGCTTG GCTGTCTGGT TTGTGGTATT ACAGAGCTTA     1740
ATAAAAGACT TAGATGTGAA AAAAAAAAAA AAAAAAAAAA AAAAAA     1785

```

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1896 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

```

GGTTATGTCT GACTCACTGC ACTGGAGTTT GGCAAAAGCA TCTCAGAAGT GGTTGTGCTT      60
TTTGAATGA AATGATCAAT GGAGTGCTCC AGTTGTATGC TGGCCTCTGG ATACTAACTA      120
GACCTGCC TG ACTCCAGGAA CTAAGGCTCA GTATCTGCAG AAGCTTTTTG CCCATCTCAT      180
TCCGGCTATG GGGACAACAT GTCTTCACCC AGGAAGGTTA GAGGAAAAAC TGGAAGAGAT      240
AATGATGAAG AGGAGGGTAA TTCAGGTAAC CTGAATCTCC GCAACTCTTT GCCTTCATCG      300
AGTCAGAAAA TGACGCCTAC GAAGCCGGTA CAAAATAAAA ATCTCATGAA GTATGAAGAA      360
CACTTAGATA TATTGATGGT GTTTTTATTG ATAAAAACCA TATGGTATAA TGTCTTCAA      420
TTATGGAAAG GCAAGCTTAT TTTTGGGAAT AAAATGAATT CAGAGAATGT AAAACCTCC      480
CATCACCTGT CATTCTCAGA TAAGTATGAG CTGTGTTTACC CAGAGCCTTT GGAAAGTGAC      540
ACTGATGAGA CTGTGTGGGA TGTCAGTGAC CGGTCTCTCA GAAACAGGTG GAACAGTATG      600
GATTCAGAGA CTGCAGGGCC GTCAAAGACT GTCTCCCCAG TGCTTCTCTGG TAGTAGTAGG      660
CTCTCAAAGG AACTGAAAC ATCTGTCTCT GAAAAGGAGC TAACTCAGTT GGCTCAGATT      720
CGACCATTAA TATTCAACAG TTCTGCACGG TCTGCTATGC GGGATTGTTT GAACACGCTT      780
CAGAAAAAAG AAGAACTTGA TATCATCCGT GAGTTTTTGG AGTTAGAACA AATGACTCTG      840
CCTGATGACT TCAATTCTGG GAATACACTA CAGAACAGAG ATAAGAACAG ATACCGAGAT      900
ATTCTTCCAT ATGATTCAAC ACGTGTTTCT CTGGAAAAA ACAAGGACTA CATCAACGCT      960
AGTTATATTA GAATAGTAAA TCATGAAGAA GAGTATTTTT ATATTGCCAC TCAAGGACCA     1020
TTGCCAGAAA CTATAGAAGA CTTTTGGCAA ATGGTCTCTG AAAATAATTG TAATGTTATT     1080
GCTATGATAA CCAGAGAGAT AGAATGTGGA GTTATCAAGT GTTACAGTTA CTGGCCCATT     1140
TCTCTGAAGG AGCCTTTGGA ATTCAACAC TTTAGTGTCT TTCTGGAGAC CTTTCATGTA     1200
ACTCAATATT TCACCGTTCG AGTATTTTCT ATTGTGAAGA AGTCCACAGG AAAGAGCCAA     1260
TGTGTAAAC ACTTGCAGTT CACCAAGTGG CCAGACCATG GCACTCCTGC CTCAGCAGAT     1320
TTTTTCATAA AATATGTCCG TTATGTGAGG AAGAGCCACA TTACAGGACC CCTCCTTGTT     1380
CACTGCAGTG CTGGTGTAGG CCGAACAGGG GTGTTTCATAT GTGTGGATGT TGTGTTCTCT     1440
GCCATCGAGA AGAACTACTC TTTTGACATT ATGAACATAG TGACCCAGAT GAGAAAGCAG     1500
CGCTGTGGCA TGATTCAAAC CAAGGAGCAG TACCAGTTTT GTTATGAAAT TGTGCTTGAA     1560
GTTCTTCAGA ACCTTCTGGC TTTGTATTAA GAGAGACTTC TGCGCCTGTC CCTCGAGGTT     1620
ACCGAGCAGC TTGGAGCCTG AGCCGTGCTG AAGCGTCTGC GGGCCGTGCA GTCTGCCTTC     1680
TGATTTTTCT CTCTGAAAGT CCCTGAAGGT AGCACTACTG GGCACAGAGT GAACTGTTTC     1740
CACTTGATCT TTCTGAACAA GAGCAAAATA CCCTCCATGC CTTCTACGGA AACGGAAGTT     1800
GCATGAAACA ACCTCCGCTT GGCTGTCTGG TTTGTGGTAT TACAGAGCTT AATAAAAGAC     1860
TTAGATGTGA AAAAAAAAAA AAAAAAAAAA AAAAAA      1896

```

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1692 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

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GGTTATGTCT GACTCACTGC ACTGGAGTTT GGCAAAAGCA TCTCAGAAGT GGTTGTGCTT      60

```

TTTTGAATGA	AATGATCAAT	GGAGTGCTCC	AGTTGTATGC	TGGCCTCTGG	ATACTAACTA	120
GACCTGCCTG	ACTCCAGGAA	CTAAGGCTCA	GTATCTGCAG	AAGCTTTTTG	CCCATCTCAT	180
TCCGGCTATG	GGGACAAACAT	GTCTTCACCC	AGGAAGGTTA	GAGGAAAAAC	TGGAAGAGAT	240
AATGATGAAG	AGGAGGGTAA	TTCAGGTAAC	CTGAATCTCC	GCAACTCTTT	GCCTTCATCG	300
AGTCAGAAAA	TGACGCCTAC	GAAGCCGATT	TTTGGGAATA	AAATGAATTC	AGAGAATGTA	360
AAACCCTCCC	ATCACCTGTC	ATTCTCAGAT	AAGTATGAGC	TTGTTTACCC	AGAGCCTTTG	420
GAAAGTGACA	CTGATGAGAC	TGTGTGGGAT	GTCAGTGACC	GGTCTCTCAG	AAACAGGTGG	480
AACAGTATGG	ATTGAGAGAC	TGCAGGGCCG	TCAAAGACTG	TCTCCCCAGT	GCTTTCTGGT	540
AGTAGTAGGC	TCTCAAAGGA	CACTGAAACA	TCTGTCTCTG	AAAAGGAGCT	AACTCAGTTG	600
GCTCAGATTC	GACCATTAAT	ATTCAACAGT	TCTGCACGGT	CTGCTATGCG	GGATTGTTTG	660
AACACGCTTC	AGAAAAAAGA	AGAACTTGAT	ATCATCCGTG	AGTTTTTGGA	GTTAGAACAA	720
ATGACTCTGC	CTGATGACTT	CAATTCTGGG	AATACACTAC	AGAACAGAGA	TAAGAACAGA	780
TACCGAGATA	TTCTTCCATA	TGATTCAACA	CGTGTTCCCT	TTGGAAAAAA	CAAGGACTAC	840
ATCAACGCTA	GTTATATTAG	AATAGTAAAT	CATGAAGAAG	AGTATTTTTA	TATTGCCACT	900
CAAGGACCAT	TGCCAGAAAC	TATAGAAGAC	TTTTGGCAAA	TGGTTCTGGA	AAATAATTGT	960
AATGTTATTG	CTATGATAAC	CAGAGAGATA	GAATGTGGAG	TTATCAAGTG	TTACAGTTAC	1020
TGGCCCATTT	CTCTGAAGGA	GCCTTTGGAA	TTCGAACACT	TTAGTGTCTT	TCTGGAGACC	1080
TTTCATGTAA	CTCAATATTT	CACCGTTCGA	GTATTTTCAGA	TTGTGAAGAA	GTCCACAGGA	1140
AAGAGCCAAT	GTGTAAAACA	CTTGCAAGTT	ACCAAGTGGC	CAGACCATGG	CACTCCTGCC	1200
TCAGCAGATT	TTTTCATAAA	ATATGTCCGT	TATGTGAGGA	AGAGCCACAT	TACAGGACCC	1260
CTCCTTGTTT	ACTGCAGTGC	TGGTGTAGGC	CGAACAGGGG	TGTTTCATAT	TGTGGATGTT	1320
GTGTTCTCTG	CCATCGAGAA	GAACACTCTT	TTTGACATTA	TGAACATAGT	GACCCAGATG	1380
AGAAAGCAGC	GCTGTGGCAT	GATTCAAACC	AAGGTTACCG	AGCAGCTTGG	AGCCTGAGCC	1440
GTGCTGAAGC	GTCTGCGGGC	CGTGCACTCT	GCCTTCTGAT	TTTTCTCTCT	GAAAGTCCCT	1500
GAAGGTAGCA	CTACTGGGCA	CAGAGTGAAC	TGTTTCCACT	TGATCTTTCT	GAACAAGAGC	1560
AAAATACCCT	CCATGCCCTT	TACGGAAACG	GAAGTTGCAT	GAAACAACCT	CCGCTTGGCT	1620
GTCTGGTTTG	TGGTATTACA	GAGCTTAATA	AAAGACTTAG	ATGTGAAAAA	AAAAAAAAAA	1680
AAAAAAAAAA	AA					1692

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 320 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

GAAAATAATT	GTAATGTTAT	TGCTATGATA	ACCAGAGAGA	TAGAAGGTGG	AGTTATCAAG	60
TGTTGCAGTT	ACTGGCCCGT	TTCTCTGAAG	GAGCCTTTGG	AATTCAAACA	CTTTTCATGTC	120
CTTCTGGAGA	ACTTTCAGAT	AACTCAGTAT	TTTGTCATCC	GAATATTTCA	AATTGTGAAG	180
AAGTCCACAG	GAAAGAGTCA	CTCTGTAAAA	CACCTGCAGT	TCATCAAATG	GCCAGACCAT	240
GGCACTCCTG	CCTCAGTAGA	TTTTTTTCATC	AAATATGTCC	GTTATGTGAG	GAAGAGCCAC	300
ATTACAGGAC	CCCTCCTTGT					320

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 426 amino acids

(B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Met	Ser	Ser	Pro	Arg	Lys	Val	Arg	Gly	Lys	Thr	Gly	Arg	Asp	Asn	Asp	1	5	10	15
Glu	Glu	Glu	Gly	Asn	Ser	Gly	Asn	Leu	Asn	Leu	Arg	Asn	Ser	Leu	Pro	20	25	30	
Ser	Ser	Ser	Gln	Lys	Met	Thr	Pro	Thr	Lys	Pro	Ile	Phe	Gly	Asn	Lys	35	40	45	
Met	Asn	Ser	Glu	Asn	Val	Lys	Pro	Ser	His	His	Leu	Ser	Phe	Ser	Asp	50	55	60	
Lys	Tyr	Glu	Leu	Val	Tyr	Pro	Glu	Pro	Leu	Glu	Ser	Asp	Thr	Asp	Glu	65	70	75	80
Thr	Val	Trp	Asp	Val	Ser	Asp	Arg	Ser	Leu	Arg	Asn	Arg	Trp	Asn	Ser	85	90	95	
Met	Asp	Ser	Glu	Thr	Ala	Gly	Pro	Ser	Lys	Thr	Val	Ser	Pro	Val	Leu	100	105	110	
Ser	Gly	Ser	Ser	Arg	Leu	Ser	Lys	Asp	Thr	Glu	Thr	Ser	Val	Ser	Glu	115	120	125	
Lys	Glu	Leu	Thr	Gln	Leu	Ala	Gln	Ile	Arg	Pro	Leu	Ile	Phe	Asn	Ser	130	135	140	
Ser	Ala	Arg	Ser	Ala	Met	Arg	Asp	Cys	Leu	Asn	Thr	Leu	Gln	Lys	Lys	145	150	155	160
Glu	Glu	Leu	Asp	Ile	Ile	Arg	Glu	Phe	Leu	Glu	Leu	Glu	Gln	Met	Thr	165	170	175	
Leu	Pro	Asp	Asp	Phe	Asn	Ser	Gly	Asn	Thr	Leu	Gln	Asn	Arg	Asp	Lys	180	185	190	
Asn	Arg	Tyr	Arg	Asp	Ile	Leu	Pro	Tyr	Asp	Ser	Thr	Arg	Val	Pro	Leu	195	200	205	
Gly	Lys	Asn	Lys	Asp	Tyr	Ile	Asn	Ala	Ser	Tyr	Ile	Arg	Ile	Val	Asn	210	215	220	
His	Glu	Glu	Glu	Tyr	Phe	Tyr	Ile	Ala	Thr	Gln	Gly	Pro	Leu	Pro	Glu	225	230	235	240
Thr	Ile	Glu	Asp	Phe	Trp	Gln	Met	Val	Leu	Glu	Asn	Asn	Cys	Asn	Val	245	250	255	
Ile	Ala	Met	Ile	Thr	Arg	Glu	Ile	Glu	Cys	Gly	Val	Ile	Lys	Cys	Tyr				

260	265	270
Ser Tyr Trp Pro Ile Ser Leu Lys Glu Pro Leu Glu Phe Glu His Phe		
275	280	285
Ser Val Phe Leu Glu Thr Phe His Val Thr Gln Tyr Phe Thr Val Arg		
290	295	300
Val Phe Gln Ile Val Lys Lys Ser Thr Gly Lys Ser Gln Cys Val Lys		
305	310	315
His Leu Gln Phe Thr Lys Trp Pro Asp His Gly Thr Pro Ala Ser Ala		
325	330	335
Asp Phe Phe Ile Lys Tyr Val Arg Tyr Val Arg Lys Ser His Ile Thr		
340	345	350
Gly Pro Leu Leu Val His Cys Ser Ala Gly Val Gly Arg Thr Gly Val		
355	360	365
Phe Ile Cys Val Asp Val Val Phe Ser Ala Ile Glu Lys Asn Tyr Ser		
370	375	380
Phe Asp Ile Met Asn Ile Val Thr Gln Met Arg Lys Gln Arg Cys Gly		
385	390	395
Met Ile Gln Thr Lys Glu Gln Tyr Gln Phe Cys Tyr Glu Ile Val Leu		
405	410	415
Glu Val Leu Gln Asn Leu Leu Ala Leu Tyr		
420	425	

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH:	463 amino acids
(B) TYPE:	amino acid
(C) STRANDEDNESS:	single
(D) TOPOLOGY:	linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Met	Ser	Ser	Pro	Arg	Lys	Val	Arg	Gly	Lys	Thr	Gly	Arg	Asp	Asn	Asp
1				5				10					15		
Glu	Glu	Glu	Gly	Asn	Ser	Gly	Asn	Leu	Asn	Leu	Arg	Asn	Ser	Leu	Pro
			20					25					30		
Ser	Ser	Ser	Gln	Lys	Met	Thr	Pro	Thr	Lys	Pro	Val	Gln	Asn	Lys	Asn
			35				40					45			
Leu	Met	Lys	Tyr	Glu	Glu	His	Leu	Asp	Ile	Leu	Met	Val	Phe	Leu	Leu

Ser Gln Cys Val Lys His Leu Gln Phe Thr Lys Trp Pro Asp His Gly

355	360	365
Thr Pro Ala Ser Ala Asp	Phe Phe Ile Lys Tyr Val	Arg Tyr Val Arg
370	375	380
Lys Ser His Ile Thr Gly	Pro Leu Leu Val His Cys	Ser Ala Gly Val
385	390	395 400
Gly Arg Thr Gly Val Phe	Ile Cys Val Asp Val Val	Phe Ser Ala Ile
405	410	415
Glu Lys Asn Tyr Ser Phe	Asp Ile Met Asn Ile Val	Thr Gln Met Arg
420	425	430
Lys Gln Arg Cys Gly Met	Ile Gln Thr Lys Glu Gln	Tyr Gln Phe Cys
435	440	445
Tyr Glu Ile Val Leu Glu	Val Leu Gln Asn Leu Leu	Ala Leu Tyr
450	455	460

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 405 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Met Ser Ser Pro Arg Lys Val Arg Gly Lys Thr Gly Arg Asp Asn Asp
1 5 10 15
Glu Glu Glu Gly Asn Ser Gly Asn Leu Asn Leu Arg Asn Ser Leu Pro
20 25 30
Ser Ser Ser Gln Lys Met Thr Pro Thr Lys Pro Ile Phe Gly Asn Lys
35 40 45
Met Asn Ser Glu Asn Val Lys Pro Ser His His Leu Ser Phe Ser Asp
50 55 60
Lys Tyr Glu Leu Val Tyr Pro Glu Pro Leu Glu Ser Asp Thr Asp Glu
65 70 75 80
Thr Val Trp Asp Val Ser Asp Arg Ser Leu Arg Asn Arg Trp Asn Ser
85 90 95
Met Asp Ser Glu Thr Ala Gly Pro Ser Lys Thr Val Ser Pro Val Leu
100 105 110
Ser Gly Ser Ser Arg Leu Ser Lys Asp Thr Glu Thr Ser Val Ser Glu

115	120	125
Lys Glu Leu Thr Gln Leu Ala Gln Ile Arg Pro Leu Ile Phe Asn Ser 130	135	140
Ser Ala Arg Ser Ala Met Arg Asp Cys Leu Asn Thr Leu Gln Lys Lys 145	150	155 160
Glu Glu Leu Asp Ile Ile Arg Glu Phe Leu Glu Leu Glu Gln Met Thr 165	170	175
Leu Pro Asp Asp Phe Asn Ser Gly Asn Thr Leu Gln Asn Arg Asp Lys 180	185	190
Asn Arg Tyr Arg Asp Ile Leu Pro Tyr Asp Ser Thr Arg Val Pro Leu 195	200	205
Gly Lys Asn Lys Asp Tyr Ile Asn Ala Ser Tyr Ile Arg Ile Val Asn 210	215	220
His Glu Glu Glu Tyr Phe Tyr Ile Ala Thr Gln Gly Pro Leu Pro Glu 225	230	235 240
Thr Ile Glu Asp Phe Trp Gln Met Val Leu Glu Asn Asn Cys Asn Val 245	250	255
Ile Ala Met Ile Thr Arg Glu Ile Glu Cys Gly Val Ile Lys Cys Tyr 260	265	270
Ser Tyr Trp Pro Ile Ser Leu Lys Glu Pro Leu Glu Phe Glu His Phe 275	280	285
Ser Val Phe Leu Glu Thr Phe His Val Thr Gln Tyr Phe Thr Val Arg 290	295	300
Val Phe Gln Ile Val Lys Lys Ser Thr Gly Lys Ser Gln Cys Val Lys 305	310	315 320
His Leu Gln Phe Thr Lys Trp Pro Asp His Gly Thr Pro Ala Ser Ala 325	330	335
Asp Phe Phe Ile Lys Tyr Val Arg Tyr Val Arg Lys Ser His Ile Thr 340	345	350
Gly Pro Leu Leu Val His Cys Ser Ala Gly Val Gly Arg Thr Gly Val 355	360	365
Phe Ile Cys Val Asp Val Val Phe Ser Ala Ile Glu Lys Asn Tyr Ser 370	375	380
Phe Asp Ile Met Asn Ile Val Thr Gln Met Arg Lys Gln Arg Cys Gly 385	390	395 400
Met Ile Gln Thr Lys 405		

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 122 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

```

Asp Phe Trp Gly Met Met Trp Glu Asn Asn Cys Asn Val Ile Ala Met
 1             5             10             15
Ile Thr Arg Glu Ile Glu Gly Gly Val Ile Lys Cys Cys Ser Tyr Trp
 20             25             30
Pro Val Ser Leu Lys Glu Pro Leu Glu Phe Lys His Phe His Val Leu
 35             40             45
Leu Glu Asn Phe Gln Ile Thr Gln Tyr Phe Val Ile Arg Ile Phe Gln
 50             55             60
Ile Val Lys Lys Ser Thr Gly Lys Ser His Ser Val Lys His Leu Gln
 65             70             75             80
Phe Ile Lys Trp Pro Asp His Gly Thr Pro Ala Ser Val Asp Phe Phe
 85             90             95
Ile Lys Tyr Val Arg Tyr Val Arg Lys Ser His Ile Thr Gly Pro Leu
 100            105            110
Leu Val His Cys Thr Ala Gly Val Gly Arg
 115            120

```

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 23 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ix) FEATURE:

(D) OTHER INFORMATION: The letter "Y" stands for C or T.

The letter "V" stands for A, C or G.

The letter "R" stands for A or G.
 The letter "N" stands for A, C, G

or T.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

GAYTTYTGTV RNATGRTNTG GGA

23

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 23 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ix) FEATURE:

- (D) OTHER INFORMATION: The letter "S" stands for C or G.
The letter "Y" stands for C or T.
The letter "N" stands for A, C, G
or T.
The letter "W" stands for A or T.
The letter "R" stands for A or G.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

CGGCCSAYNC CNGCNSWRCA RTG

23

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ix) FEATURE:

- (D) OTHER INFORMATION: "Xaa" in positions 4 and 6 stand
for an unspecified amino acid.
"Xaa" in position 8 stands for
either Glu or Asp.

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Asp Phe Trp Xaa Met Xaa Trp Xaa

1

5

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(ix) FEATURE:

- (D) OTHER INFORMATION: "Xaa" in positions 3 and 6 stand for an unspecified amino acid.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

His Cys Xaa Ala Gly Xaa Gly
 1 5

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 34 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

CACCGTTCGA GTATTCAGA TTGTGAAGAA GTCC

34

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 34 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

GGACTTCTTC ACAATCTGAA ATACTCGAAC GGTG

34

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 33 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

CCGTTATGTG AGGAAGAGCC ACATTACAGG ACC

33

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 33 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

GGTCCTGTAA TGTGGCTCTT CCTCACATAA CGG

33

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 34 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

CACCGTTCGA GTATTCAGA TTGTGAAGAA GTCC

34

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 33 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

GGTCCTGTAA TGTGGCTCTT CCTCACATAA CGG

33

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Tyr	Pro	Tyr	Asp	Val	Pro	Asp	Tyr	Ala	Ser
1				5					10

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 5 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

His	Cys	Ser	Ala	Gly
1			5	

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 29 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Met Ser Ser Pro Arg Lys Val Arg Gly Lys Thr Gly Arg Asp Asn Asp
 1 5 10 15

Glu Glu Glu Gly Asn Ser Gly Asn Leu Asn Leu Arg Asn
 20 25

(2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 29 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Ser Pro Val Leu Ser Gly Ser Ser Arg Leu Ser Lys Asp Thr Glu Thr
 1 5 10 15

Ser Val Ser Glu Lys Glu Leu Thr Gln Leu Ala Gln Ile
 20 25

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 29 amino acids
 (B) TYPE: amino acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

Trp Asp Val Ser Asp Arg Ser Leu Arg Asn Arg Trp Asn Ser Met Asp
 1 5 10 15

Ser Glu Thr Ala Gly Pro Ser Lys Thr Val Ser Pro Val
 20 25

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Gregory Plowman, et al.

Serial No. 09/095,478

Filed: June 10, 1998

For: **DIAGNOSIS AND TREATMENT OF
PTP RELATED DISORDERS**

Group Art Unit: 1642

Examiner: Lin Sun-Hoffman

PETITION FOR EXTENSION OF TIME

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

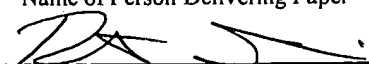
Pursuant to 37 C.F. R. § 1.136, Applicant hereby petitions for a three-month extension of time to respond to the Office Action mailed January 20, 2000. This extension is effective to allow the timely filing of a response up to and including May 20, 2000.

CERTIFICATE OF MAILING

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being hand delivered on the date shown below to the Assistant Commissioner for Patents, Washington, D.C. 20231.

May 12, 2000
Date of Delivery

Ruth Saskowski
Name of Person Delivering Paper

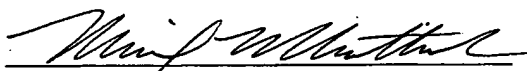

Signature of Person Delivering Paper

Enclosed is a check in the amount of \$870.00 to cover the fees associated with this
Petition. If the enclosed fee is incorrect, please charge or credit our Deposit Account No. 50-
1273 for the appropriate amount.

Respectfully submitted,

Brobeck, Phleger & Harrison LLP

Dated: 5/12/00

By 
Michael A. Whittaker
Reg. No. 46,230

BROBECK, PHLEGER & HARRISON LLP
12390 El Camino Real
San Diego, CA 92130-2081
Telephone: (858) 720-2500
Facsimile: (858) 720-2555

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gregory D. PLOWMAN et al.

Title: DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS

Appl. No.: 09/095,478

Filing Date: 06/10/1998

Examiner: L. Sun-Hoffman

Art Unit: 1642

CHANGE OF CORRESPONDENCE ADDRESS

Commissioner for Patents
Washington, D.C. 20231

Sir:

Applicant's attorney respectfully requests that the records of the United States Patent and Trademark Office in connection with the above-identified application be changed to show the following address and telephone number for all future communications.

Beth A. Burrous
Foley & Lardner
Washington Harbour
3000 K Street, N.W., Suite 500
Washington, D.C. 20007-5109

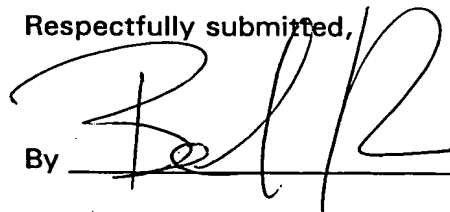
Telephone: (202) 672-5475
Facsimile: (202) 672-5399

Respectfully submitted,

Date

May 14, 2001

By



FOLEY & LARDNER
Washington Harbour
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Beth A. Burrous
Attorney for Applicant
Registration No. 35,087

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gregory D. PLOWMAN et al.

Title: DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS

Appl. No.: 09/095,478

Filing Date: 06/10/1998

Examiner: L. Sun-Hoffman

Art Unit: 1642

STATUS INQUIRY

Commissioner for Patents
Washington, D.C. 20231

Sir:

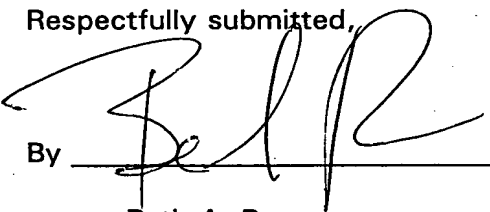
Applicants respectfully request to be advised of the status of the above captioned application. The last communication in this application was an Office Action dated January 20, 2000, to which a Response was filed on May 12, 2000.

Date May 14, 2001

FOLEY & LARDNER
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Respectfully submitted,

By


Beth A. Burrous
Attorney for Applicant
Registration No. 35,087

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No.: 038602/0393

Applicant: Plowman et al.

Appl. No.: 09/095,478

Filing Date: June 10, 1998

Examiner: L. Sun-Hoffman

Art Unit: 1642

Title: DIAGNOSIS AND TREATMENT OF PTP RELATED DISORDERS

**REVOCATION OF PRIOR POWERS OF ATTORNEY AND
APPOINTMENT OF NEW POWER OF ATTORNEY BY ASSIGNEE
CHANGE OF CORRESPONDENCE ADDRESS**Commissioner for Patents
Washington, D.C. 20231

Sir:

SUGEN, Inc. is the assignee of Application No.: 09/095,478, filed June 10, 1998 and all continuing applications thereof, as evidenced by an Assignment recorded in the U.S. Patent and Trademark Office on November 16, 1998 at reel/frame 9592/0970.

SUGEN Inc., through its duly-delegated representative, hereby revokes all prior Powers of Attorney submitted in this application, and hereby appoints the following registered attorneys and agents of the law firm of FOLEY & LARDNER:

STEPHEN A. BENT	Reg. No. 29,768
DAVID A. BLUMENTHAL	Reg. No. 26,257
BETH A. BURROUS	Reg. No. 35,087
ALAN I. CANTOR	Reg. No. 28,163
WILLIAM T. ELLIS	Reg. No. 26,874
JOHN J. FELDHAUS	Reg. No. 28,822
MICHAEL D. KAMINSKI	Reg. No. 32,904
LYLE K. KIMMS	Reg. No. 34,079
KENNETH E. KROSIN	Reg. No. 25,735
JOHNNY A. KUMAR	Reg. No. 34,649
GLENN LAW	Reg. No. 34,371
PETER G. MACK	Reg. No. 26,001

Atty. Dkt. No. 038602/0393

STEPHEN B. MAEBIUS
BRIAN J. MC NAMARA
SYBIL MELOY
RICHARD C. PEET
GEORGE E. QUILLIN
ANDREW E. RAWLINS
BERNHARD D. SAXE
CHARLES F. SCHILL
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ARTHUR SCHWARTZ
MICHELE SIMKIN
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Reg. No. 32,789
Reg. No. 22,749
Reg. No. 35,792
Reg. No. 32,792
Reg. No. 34,703
Reg. No. 28,665
Reg. No. 27,590
Reg. No. 25,479
Reg. No. 22,115
Reg. No. 34,717
Reg. No. 25,258

and the following additional attorneys: Rekha Bansal, Reg. No. 36,440 and Leslie Ann Mooi, Reg. No. 37,047; as its principal attorneys to have full power to prosecute this application and any continuations, divisions, reissues, and reexaminations thereof, to receive the patent, to transact all business in the United States Patent and Trademark Office connected therewith, and to have full power of substitution, association, and revocation, including the power to revoke the power of attorney of any associate attorney.

Please direct all future correspondence concerning this application to:

Beth A. Burrous

FOLEY & LARDNER

Washington Harbour

3000 K Street, N.W., Suite 500

Washington, D.C. 20007-5109

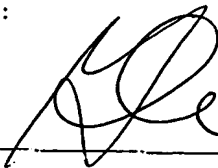
Telephone: (202) 672-5300

Facsimile: (202) 672-5399

Executed this 8th day of May, 2001.

SUGEN Inc.:

By:



(Signature)

GERALD McMAHON

(Printed Name)

Senior Vice President, Discovery

(Title)